AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended)   A multi-functional switch fabric apparatus comprising:

a plurality of input data processors including a plurality of unit inlet data processors, which copy, distribute, switch, and output input user data according to a mode set signal from the outside;

a switch fabric unit, which includes a plurality of switching units and selectively outputs the user data input from the plurality of input data processors according to the mode set signal;

a plurality of output data processors, which buffer, schedule, multiplex, and output the user data input from the switch fabric unit; and

a control unit, which outputs the mode set signal to control the plurality of input data processors, the switch fabric unit, and the plurality of output data processors, wherein each unit inlet data processor is coupled to a separate switching unit.

Claim 2 (Currently Amended)   The multi-functional switch fabric apparatus of claim 1, wherein the input data processor comprises:

a path and a mode set unit, which copies, switches, or distributes the user data to a path that is set based on the mode set signal; and
wherein thea plurality of unit inlet data processors, which are connected to the path and mode set unit to buffer, virtual output buffer queue, schedule, switch, or de-multiplex the user data.

Claim 3 (Original)   The multi-functional switch fabric apparatus of claim 1, wherein the output data processor comprises:

a filter unit, which selectively passes the user data input from the switch fabric unit according to the mode set signal;

a plurality of buffer units, which buffer the user data passed through the filter unit;

a path change unit, which selects and outputs the user data input from the plurality of buffer units according to a predetermined path change signal; and

a path control unit, which outputs the path change signal according to the mode set signal.

Claim 4 (Currently Amended)   The multi-functional switch fabric apparatus of claim 2, wherein <u>each of</u> the plurality of switching units included in the switch fabric unit are crossbar switches, and

the control unit outputs a first mode set signal, which allows the path and <u>the</u> mode set unit to copy and supply the user data to the plurality of unit inlet data processors, at least one of the switching units to operate as an active switch, and the outlet data processor to select one of the user data input from the switch fabric unit as an effective data.

Claim 5 (Original)   The multi-functional switch fabric apparatus of claim 4, wherein the outlet data processor selects the user data, which is provided from the switch in an active state, as the effective data.

Claim 6 (Original)   The multi-functional switch fabric apparatus of claim 4, wherein when an error occurs in the connection to the switch operating in an active state, the output data processor selects the user data, which is provided from the switch in a standby state, as an effective state.

Claim 7 (Currently Amended)   The multi-functional switch fabric apparatus of claim 2, wherein <u>each of</u> the plurality of switching units included in the switch fabric unit are crossbar switches, and

the control unit outputs a second mode set signal, which allows the path and <u>the</u> mode set unit to distribute the user data to the plurality of unit inlet data processors, the switching units to operate as active switches, and the outlet data processor to schedule and output the plurality of user data input from the switch fabric unit.

Claim 8 (Currently Amended)   The multi-functional switch fabric apparatus of claim 2, wherein the switch fabric unit includes a plurality of switches that transfer data by different methods, and

the control unit outputs a third mode set signal, which allows the path and the mode set unit to distribute the user data to the plurality of unit inlet data processors according to the service type of the user data, and the outlet data processor to schedule and output the plurality of user data input from the switch fabric unit.

Claim 9 (Currently Amended)   A control method for a multi-functional switch fabric apparatus, the control method comprising:

copying, switching, or distributing input user data to a predetermined path according to a predetermined mode set signal by a plurality of input data processors each including a plurality of unit inlet data processors;

buffering, virtual output buffer queuing, scheduling, switching, or de-multiplexing the user data according to the mode set signal by a switch fabric including a plurality of separate switching units;

selectively outputting the user data according to the mode set signal by using a the plurality of switching units; and

buffering, scheduling, or multiplexing and outputting the user data according to the mode set signal.

Claim 10 (Original)   The control method of claim 9, wherein selectively outputting the user data comprises:

selectively passing the user data input from the switching units according to the mode set signal;

buffering the passed user data; and

selectively outputting the buffered user data according to a predetermined path change signal.

Claim 11 (Currently Amended)   The control method of claim 9, wherein each of the plurality of switching units are crossbar switches of which at least one operates as an active switch,

the input user data are copied and supplied to each of ~~a~~ the plurality of unit inlet data processors when copying, switching, or distributing input user data to the predetermined path according to the predetermined mode set signal, and

one of the plurality of user data input from the switching units is selected and output as an effective data when selectively outputting the user data according to the mode set signal by using a plurality of switching units.

Claim 12 (Currently Amended)   The control method of claim 11, wherein the user data output from the at least one switching unit operating as an active switch is selected and output as the effective data when selectively outputting the user data according to the mode set signal by using a plurality of switching units.

Claim 13 (Currently Amended)   The control method of claim 11, wherein when an error occurs in the connection to the at least one switching unit operating as the active switch, the user data, which is provided from the switching unit operating as a standby switch, is selected and output as an effective data.

Claim 14 (Currently Amended)   The control method of claim 9, wherein each of the plurality of switching units are crossbar switches in an active state,

the user data are distributed to each of the plurality of unit inlet data processors when copying, switching, or distributing input user data to the predetermined path according to the predetermined mode set signal, and

the plurality of user data input from the switching units are scheduled and output when selectively outputting the user data according to the mode set signal by using a plurality of switching units.

Claim 15 (Currently Amended)   The control method of claim 9, wherein the plurality of switching units are each switches that transfer data by different methods,

the user data are distributed to the plurality of unit inlet data processors according to the service type of the user data when copying, switching, or distributing input user data to the predetermined path according to the predetermined mode set signal, and

the plurality of user data input from the plurality of switching units are scheduled and output when selectively outputting the user data according to the mode set signal by using a plurality of switching units.

Claim 16 (Currently Amended)   A recording medium containing instructionsreadable by a computer, which, when read by a computer causes the computer to:

perform a control method of a multi-functional switch fabric apparatus in the computer, the recording medium comprising:

copying, switching, or distributing distribute input user data into a predetermined path according to a predetermined mode set signal by a plurality of input data processors each including a plurality of unit inlet data processors;

buffering, virtual output buffer queuingqueue, schedulingschedule, switching, or de-multiplexing the user data according to the mode set signal by a switch fabric including a plurality of separate switching units;

selectively outputting the user data according to the mode set signal by using a plurality of switching units; and

buffering, schedulingschedule, or multiplexing and outputting the user data according to the mode set signal,

wherein the computer performs a control method of a multi-functional switch fabric apparatus.